IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors:	Tom Fawcett, et al.	Examiner: Kalpana Bharadwaj
Serial No.:	10/822,066	Group Art Unit: 2129
Filed:	April 8, 2004	Docket No.: 200310087-1
Title:	Identifying Exceptional Managed Systems	

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief is filed in response to the Final Office Action mailed September 8, 2008 and Notice of Appeal mailed December 8, 2008.

AUTHORIZATION TO DEBIT ACCOUNT

It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's deposit account no. 08-2025.

I. REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II. RELATED APPEALS AND INTERFERENCES

There are no known related appeals or interferences known to Appellant, Appellant's legal representative, or assignee that will directly affect or be directly affected by or have a bearing on the Appeal Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1 – 23 are pending in the application and stand finally rejected. The rejection of claims 1 – 23 is appealed.

IV. STATUS OF AMENDMENTS

No amendments were made after receipt of the Final Office Action. All amendments have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The following provides a concise explanation of the subject matter defined in each of the claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element or that these are the sole sources in the specification supporting the claim features.

Claim 1

A method of identifying at least one exceptional managed system amongst a set of comparable managed systems, each managed system having a number of system configuration attributes, the method comprising (Fig. 1 shows a method to the identification of an exceptional managed system among a set of comparable managed systems; p. 3, lines 21-25):

selecting a set of managed systems (Fig. 1, #102; p. 3, lines 26-27; each managed system is described in terms of a number of system configuration attributes; p. 4, lines 9-11);

selecting a set of parameterizations relating to the managed systems (Fig. 1, #104; p. 3, lines 27-28; parameterizations relate to a setting or a series of settings for system configuration attributes; p. 5, lines 10-13);

determining a pattern for each of the parameterizations based on the system configuration attributes (Fig. 1, #106; p. 3, lines 28-30; the pattern characterizes the system configuration attributes that are common among a set of comparable managed systems, for example systems having a same or similar make, model, operating system, hardware configuration; p. 5, lines 17-26);

comparing substantially each of the managed systems to substantially each of the patterns (Fig. 1, #108; p. 4, lines 1-4; the managed systems are compared to the patterns to indicate whether a particular system deviates from a pattern that characterizes the configuration that is common to comparable systems; p. 9, lines 23-28); and

isolating a managed system based on the comparing (Fig. 1, #110; p. 4, lines 4-6; systems that do not conform to the pattern, for example because they are exceptions to a rule generated by the machine learning algorithm, are identified and isolated; p. 10, lines 3-6);

wherein the patterns are determined by a supervised machine learning algorithm (p. 3, lines 30-31).

Claim 3

The method of claim 2, wherein the system configuration attributes include at least one of the following:

operating system patches;

active processes;

installed application software programs;

memory configuration; and

peripheral devices (see p. 4, lines 19 – 30 for examples of system configuration attributes).

Claim 6

The method according to claim 1, wherein the set of parameterizations includes at least one parameterization relating to operating system patches (p. 9, lines 1-11).

Claim 8

The method according to claim 1, further comprising assigning a priority value to an isolated system (p. 10, lines 23-25; p. 11, lines 12-14).

Claim 11

The method according to claim 1, wherein the supervised machine learning algorithm is a rule learning algorithm (p. 8, lines 8-14).

Claim 14

A system for identifying exceptional managed systems amongst comparable managed systems, each managed system having a number of system configuration attributes, the system comprising (Fig. 2 shows application of a method of an embodiment of the invention to a plurality of systems x; p. 13, lines 15-17):

a selection component that selects a set of managed systems (Fig. 2, #202; nominate a set of managed computer systems x having a variety of system configuration attributes; p. 13, lines 17-22);

a supervised machine learning algorithm that determines patterns for a set of parameterizations representing constraints on the system configuration attributes for the selected set of managed systems (Fig. 2, #208; use a supervised rule-learning algorithm to develop a pattern m for each parameterization p; 13, lines 23-24; a set of parameterizations are identified; p. 14, lines 1-3);

a comparison component that compares the managed systems to the patterns (Fig. 2, #212; compare system specific attributes with pattern m for each system z and note significant deviations d; p. 14, lines 9-16); and

an isolating component that isolates the managed systems that deviate from the patterns as exceptional managed systems (Fig. 2, #214; prioritize deviant parameters d assigning the most significant deviations higher priority; p. 14, line 16 – p 15, line 19).

Claim 22

A system for identifying exceptional managed systems amongst comparable managed systems, each managed system having a number of system configuration attributes, the system comprising (Fig. 2 shows application of a method of an embodiment of the invention to a plurality of systems x; p. 13, lines 15-17):

means for selecting a set of managed systems (Fig. 2, #202; nominate a set of managed computer systems x having a variety of system configuration attributes; p. 13, lines 17-22);

means for determining patterns for a set of parameterizations representing constraints on the system configuration attributes for the selected set of managed

systems, according to a supervised machine learning algorithm (Fig. 2, #208; use a supervised rule-learning algorithm to develop a pattern m for each parameterization p; 13, lines 23-24; a set of parameterizations are identified; p. 14, lines 1-3);

means for comparing the managed systems to the patterns (Fig. 2, #212; compare system specific attributes with pattern m for each system z and note significant deviations d; p. 14, lines 9-16); and

means for isolating managed systems that deviate from the patterns as exceptional managed systems (Fig. 2, #214; prioritize deviant parameters d assigning the most significant deviations higher priority; p. 14, line 16 – p 15, line 19).

Claim 23

Computer data storage media having programmed thereon computer software which performs the following functions (Fig. 1 shows a method to the identification of an exceptional managed system among a set of comparable managed systems; p. 3, lines 21-25):

selecting a set of managed systems, each managed system having a number of system configuration attributes (Fig. 1, #102; p. 3, lines 26-27; each managed system is described in terms of a number of system configuration attributes; p. 4, lines 9-11);

selecting a set of parameterizations relating to the managed systems (Fig. 1, #104; p. 3, lines 27-28; parameterizations relate to a setting or a series of settings for system configuration attributes; p. 5, lines 10-13);

determining a pattern for each of the parameterizations based on the system configuration attributes (Fig. 1, #106; p. 3, lines 28-30; the pattern characterizes the system configuration attributes that are common among a set of comparable managed systems, for example systems having a same or similar make, model, operating system, hardware configuration; p. 5, lines 17-26);

comparing substantially each of the managed systems to substantially each of the patterns (Fig. 1, #108; p. 4, lines 1-4; the managed systems are compared to the patterns to indicate whether a particular system deviates from a pattern that characterizes the configuration that is common to comparable systems; p. 9, lines 23-28); and

isolating an exceptional managed system based on the comparing (Fig. 1, #110; p. 4, lines 4-6; systems that do not conform to the pattern, for example because they are exceptions to a rule generated by the machine learning algorithm, are identified and isolated; p. 10, lines 3-6);

wherein the patterns are determined by a supervised machine learning algorithm (p. 3, lines 30-31).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-5, 8-16, and 19-23 are rejected under 35 USC § 103(a) as unpatentable over US publication number 2004/0243692 (Arnold) in view of US publication number 2002/0107843 (Biebesheimer).

Claims 6-7 and 17-18 are rejected under 35 USC § 103(a) as unpatentable over US publication number 2004/0243692 (Arnold) in view of US publication number 2002/0107843 (Biebesheimer) and US publication number 2003/0028825 (Hines).

VII. ARGUMENT

The rejection of claims 1 – 23 is improper, and Appellants respectfully request reversal of these rejections.

The claims do not stand or fall together. Instead, Appellants present separate arguments for various independent and dependent claims. Each of these arguments is separately argued below and presented with separate headings and sub-heading as required by 37 C.F.R. § 41.37(c)(1)(vii).

Claim Rejections: 35 USC § 103(a)

Claims 1-5, 8-16, and 19-23 are rejected under 35 USC § 103(a) as unpatentable over US publication number 2004/0243692 (Arnold) in view of US publication number 2002/0107843 (Biebesheimer). These rejections are traversed.

Principles of Law: Claim Construction

During examination of a patent application, pending claims are given their broadest reasonable construction consistent with the specification (see *In re Prater,* 415 F.2d 1393,1404-05 (CCPA 1969); *In re Am. A cad. a/Sci.Tech Ctr.,* 367 F.3d 1359, 1364 (Fed. Cir. 2004)).

Although a patent applicant is entitled to be his or her own lexicographer of terms in a claim, in *ex parte* prosecution the lexicography must be within limits. *In re Carr,* 347 F.2d 578,580 (CCPA 1965). The applicant must do so by placing such definitions in the specification with sufficient clarity to provide a person of ordinary skill in the art with clear and precise notice of the meaning that is to be construed. *See also In re Paulsen,* 30 F.3d 1475, 1480 (Fed. Cir. 1994) (although an inventor is free to define the specific terms used to describe the invention, this must be done with reasonable clarity, deliberateness, and precision; where an inventor chooses to give terms uncommon meanings, the inventor must set out any uncommon definition in some manner within the patent disclosure so as to give one of ordinary skill in the art notice of the change).

Principles of Law: Obviousness

The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. § 103 is set forth in *KSR International Co. v. Teleflex Inc.*, 550 U.S._, 82 USPQ2d 1385 (2007):

> Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. Quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966).

As set forth in MPEP 2143.03, to ascertain the differences between the prior art and the claims at issue, "[a]ll claim limitations must be considered" because "all words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385.

According to the Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of *KSR International Co. v. Teleflex Inc.*, Federal Register, Vol. 72, No. 195, 57526, 57529 (October 10, 2007), once the *Graham* factual inquiries are resolved, there must be a determination of whether the claimed invention would have been obvious to one of ordinary skill in the art based on any one of the following proper rationales:

> (A) Combining prior art elements according to known methods to yield predictable results; (B) Simple substitution of one known element for another to obtain predictable results; (C) Use of known technique to improve similar devices (methods, or products) in the same way; (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable

results; (E) ''Obvious to try''—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. *KSR International Co. v. Teleflex Inc.*, 550 U.S._, 82 USPQ2d 1385 (2007).

Furthermore, as set forth in *KSR International Co. v. Teleflex Inc.*, quoting from *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006), "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasonings with some rational underpinning to support the legal conclusion of obviousness."

Therefore, if the above-identified criteria and rationales are not met, then the cited reference(s) fails to render obvious the claimed invention and, thus, the claimed invention is distinguishable over the cited reference(s).

Scope and Content of Art and Overview of Claims

As a precursor to the arguments, Appellants provide an overview of the claims and the primary references (Arnold and Biebesheimer). This overview will assist in determining the scope and content of the prior art as required in Graham (see *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 setting out an objective analysis for applying 103 rejections).

Storage allocation is a process that involves configuring and initializing data storage devices and mapping parts of the storage areas on those storage devices (see Arnold at paragraph [0002]). Many devices (such as physical storage media, storage area networks, switches, adapters, etc.) need to be adjusted during the storage allocation process. Arnold teaches methods to automate the steps involved in storage allocation (see Arnold summary of the invention).

Biebeshmeier teaches systems and methods for performing context-based searches. A user submits a query, and a classifying system uses a context vector of data associated with an interaction state with the user to process the query and locate search results from a database. The idea is to relieve the user of describing a context for the search by including criteria derived from both data and behaviors in a general population that may be unknown to the user.

In contrast to Arnold and Biebesheimer, Appellants' claims are directed to methods and systems of identifying an exceptional managed system among a set of comparable managed systems. Each managed system has a number of system configuration attributes, such as operating system (OS) platform, OS patches, applications installed, hardware settings, etc. First, parameterizations relating to the managed systems are selected. Parameterizations relate to a setting or a series of settings for system configuration attributes. Then, a pattern is determined for each of the parameterizations based on the system configuration attributes. For example, the pattern characterizes the system configuration attributes that are common among the managed systems. The managed systems are compared to the patterns to indicate whether a particular system deviates from a pattern that characterizes the configuration. Managed systems are then isolated based on the comparison. Systems that do not conform to the pattern, for example because they are exceptions to a rule generated by a machine learning algorithm, are identified and isolated. The patterns are determined by the machine learning algorithm.

Differences Between the Art and Claims

Each of the independent claims recites one or more elements that are not taught or suggested in Arnold in view of Biebesheimer. These missing elements show that the differences between the combined teachings in the art and the recitations in the claims are great. As such, the pending claims are not a predictable variation of the art to one of ordinary skill in the art.

These differences are shown below and presented with separate headings for different claim groups.

Sub-Heading: Independent Claims 1, 14, 22, and 23

Claim 1 is selected for discussion.

As one example, claim 1 recites "determining a **pattern** for each of the parameterizations based on the system configuration attributes" (emphasis added). The Office Action equates the constraints in paragraph [0044] in Arnold with the claimed "parameterizations." Therefore, the issue is: Does Arnold teach determining a pattern for his constraints? No, Arnold does not. The Office Action does not argue that this element is taught or suggested in Biebesheimer.

Arnold does not even mention determining patterns for parameterizations or constraints. Arnold is silent as to determining patterns. The Office Action cites paragraph [0023] in Arnold. This paragraph discusses a management unit that obtains configuration information and usage metrics to execute commands and functions that it deems appropriate. Paragraph [0023] does not mention or even suggest determining patterns for parameterizations or constraints. **Arnold does not even discuss the use of patterns.**

Furthermore, the Examiner seems to substitute the claim term "parameterizations" with the word "constraint" and then argues that Arnold teaches constraints as recited in claim 1. Appellants disagree with this claim interpretation and analysis.

Appellants' specification discusses parameterizations as follows:

> A parameterization relates generally to a setting or a series of settings for system configuration attributes and may be regarded as a constraint on the system configuration attributes. Some examples of parameters may include "Patch PHLK283 is installed"; "Kernel parameter max_thread_proc is set between 64 and 256"; "Patch PHLK283 is installed and patch PHLK280 is not installed." {See p. 5, lines 10 – 15}.

Merely replacing the word "parameterizations" with the word "constraints" to perform claim analysis is not proper. The specification does not state that the word parameterization simply means constraint. Instead, the specification states that parameterizations relate to a setting or a series of settings for system configuration attributes and may be regarded as a constraint on the system configuration attributes. So,

parameterizations can be regarded as constraints on system configuration attributes, not merely, just constraints. An example of a constraint on a system configuration attribute is a patch.

The specification also discusses system configuration attributes and provides examples:

> System configuration attributes are attributes relating to system configuration which may be modified, for example to enhance system performance or to enable the system to perform a particular task....
>
> The method may relate more specifically to computer systems, wherein each computer system includes a series of system configuration attributes, such as, make and model of the system and the operating system platform, operating system patches, active processes, installed application software programs, memory configuration, peripheral devices, hardware components and other configuration settings. {See p. 4, lines 12 – 26 }.

Appellants are not requesting that the BPAI read words into the claims. Instead, Appellants respectfully request that the claims being given a broadest reasonable interpretation in light of the specification. Merely substituting the word claim word "parameterizations" with the word "constraints" as performed by the Examiner is not proper claim interpretation and analysis.

The differences between the claims and the teachings in the art are great since the references fail to teach or suggest all of the claim elements. As such, the pending claims are not a predictable variation of the art to one of ordinary skill in the art.

For at least these reasons, the claims are allowable over Arnold in view of Biebesheimer.

As another example, claim 1 recites "comparing substantially each of the managed systems to substantially each of the patterns." Nowhere does Arnold discuss making comparisons of managed systems to patterns for parameterizations based on

system configuration attributes. Again, Arnold does not each discuss patterns, let alone making comparisons of patterns with system configuration attributes.

The Office Action cites paragraphs [0045] and [0049]. Paragraph [0049] discusses comparing observed (i.e., monitored) storage attributes with a quality of service. Nowhere, however, does Arnold teach comparing patterns with system configuration attributes. **Arnold does not even discuss the use of patterns.** The Office Action does not argue that this element is taught or suggested in Biebesheimer.

The differences between the claims and the teachings in the art are great since the references fail to teach or suggest all of the claim elements. As such, the pending claims are not a predictable variation of the art to one of ordinary skill in the art.

For at least these reasons, the claims are allowable over Arnold in view of Biebesheimer.

As yet another example, claim 1 recites that the "patterns are determined by a supervised machine learning algorithm." The Office Action **admits** that Arnold does not teach a machine learning algorithm (see OA mailed 06/29/2007 at p. 3: "Arnold does not specifically disclose a machine learning algorithm."). Appellants agree with this admission. The Office Action, however, attempts to cure this deficiency with the teachings in Arnold at paragraphs [0025] and [0038]. Appellants respectfully disagree.

The Office Action essentially argues as follows: Policies and rules are used in the computer systems of Arnold. These same computer systems learn which nodes in a network. Therefore, Arnold teaches machine learning. For various reasons, this argument is flawed.

Nowhere does Arnold discuss or even suggest that his computer systems somehow use machine learning algorithms. Arnold is completely silent on the concept of machine learning algorithms. Arnold does not even contemplate the use of such algorithms. Machine learning has a distinct meaning to one of ordinary skill in the art.

Paragraph [0025] in Arnold defines the meaning of a policy. According to Arnold, policies are rules that define a choice in behavior of a system, such a traditional conditional part and action part. When the conditional part is true (i.e., the Boolean value of 0 or 1 is true), then the computer performs an action (example, for customer A use Gold storage).

Paragraph [0038] in Arnold discusses Fig. 5B. Here, a policy manager obtains a policy, evaluates functions in a conditional part of the policy, obtains variables referenced in the conditional part, and evaluates the conditional part with the values. If a condition evaluates to a Boolean value, the action part of the policy is executed.

Paragraphs [0025] and [0038] are not related to machine learning. The concept of machine learning has a distinct meaning to one skilled in the art. The Office Action is construing the art and claims in an unreasonable manner.

According to MPEP § 2111.01, the words of a claim must be given their "plain meaning." Wikipedia is an online dictionary (see www.wikipedia.com and in particular: http://en.wikipedia.org/wiki/Machine_learning) that defines "machine learning" as follows: "A broad subfield of artificial intelligence, machine learning is concerned with the design and development of algorithms and techniques that allow computers to learn."

Appellants acknowledge that claims must be given their broadest interpretation during patent examination. However, this interpretation must be a "**reasonable interpretation consistent with the specification**" (see MPEP 2111: emphasis added). Appellants' specification repeatedly uses the term "machine learning" in a manner consistent with the plain meaning of this term. Appellants respectfully ask the examiner to read p. 7, line 19 to p. 8, line 24. This section of Appellants' specification show how the term "machine learning" is used in the ordinary and plain meaning.

In short, paragraphs [0025] and [0038] in Arnold do not teach or even suggest a computer system that uses "machine learning" as the plain meaning of this term is understood by one of ordinary skill in the art.

The Office Action cites Biebesheimer to teach "supervised" machine learning. Specifically, the Office Action cites paragraph [0015] in Biebesheimer. This paragraph uses the words "supervised machine learning" but the teachings in Biebesheimer are being taken out of context. The supervised machine learning in Biebesheimer is used on historical data to classify context attributes for a query search. This teaching has nothing to do with the context of the claims or even the teachings in Arnold.

Sub-Heading: Dependent Claim 3

Claim 1 recites determining a pattern based on system configuration attributes. Dependent claim 3 then recites that these system configuration attributes include one of OS patches, active processes, installed applications, memory configuration, and peripheral devices. The Office Action cites Arnold at paragraph [0022] for allegedly teaching dependent claim 3. Appellants respectfully disagree.

Paragraph [0022] in Arnold mentions words such as: operating system, adapters, disk drives, memory, etc. Arnold, however, does not discuss determining a pattern based on such devices. In other words, even though Arnold uses the word "operating system," Arnold does not teach determining a pattern based on the operating system.

For at least these reasons, dependent claim 3 is allowable over Arnold in view of Biebesheimer.

Sub-Heading: Dependent Claim 8

Dependent clam 8 recites assigning a priority value to an isolated system. The Office Action cites Biebesheimer at paragraph [0073] for allegedly teaching dependent claim 8. Appellants respectfully disagree.

The Examiner states that paragraph [0073] in Biebesheimer specifies resource priorities. In Biebesheimer, the user can specify that they want to include some resources and exclude other resources when searching for relevant sources. Here, the user is able to specify resource priorities by specifying minimum and maximum values for criteria, such as cost, time, and quality.

This teaching in Biebesheimer is quite different than the recited element. Claim 8 recites that a priority value is assigned to an isolated system. Biebesheimer never isolates a system and assigns a priority to it. Instead, Biebesheimer teaches that a user assigns priorities to criteria for searching resources. These criteria are not an "isolated system" as recited in claim 8.

For at least these reasons, dependent claim 8 is allowable over Arnold in view of Biebesheimer.

Sub-Heading: Dependent Claim 11

Dependent clam 11 recites that the supervised machine learning algorithm is a rule learning algorithm. The Examiner argues that this element is taught Arnold at paragraph [0044] when combined with Biebesheimer. Appellants strongly disagree.

Arnold does not even suggest the use of machine learning algorithms. Machine learning algorithms are a particular type of technology not contemplated in Arnold. Paragraph [0044] in Arnold relates to constraints with quality of service for how storage resources are allocated. Again, this section of Arnold when read in view of Biebesheimer does not relate to a rule learning algorithm.

For at least these reasons, dependent claim 11 is allowable over Arnold.

Factors/Rationale Do Not Support Obviousness

In determining obviousness, neither the particular motivation to make the claimed invention nor the problem the inventor is solving controls. The proper analysis is whether the claimed invention would have been obvious to one of ordinary skill in the art after consideration of all the facts. Further, although the Supreme Court in KSR cautioned against an overly rigid application of the teaching-suggestion-motivation (TSM) rationale, the Supreme Court recognized that TSM was one of a number of valid rationales that could be used to determine obviousness.

Appellants discuss examples of rationale or factors below to show that there is no finding of obviousness.

As a first factor, Appellants respectfully submit that no teaching or suggestion exists to make the combination because the references are directed to completely different inventions. Arnold (in US class 709/20) teaches methods to automate the steps involved in storage allocation. By contrast, Biebesheimer (in US class 707/3) teaches systems and methods for performing context-based searches. A user submits a query, and a classifying system uses a context vector of data associated with an interaction state with the user to process the query and locate search results from a database

As a second factor, Arnold and Biebesheimer would have to be greatly modified to arrive at the claimed invention. Figure 1 in Arnold shows a block diagram of a system that allocates storage. This system monitors storage performance and then reallocates

storage to better manage the storage resources. Figure 1 in Biebesheimer shows components of the invention that enable users to perform context-based searching. The systems in Arnold and Biebesheimer are very different. No suggestion is provided how these different elements could be combined into a single access device as claimed.

As a third factor, the differences between the claims and the applied references are great. Examples are discussed above with respect to different claim groups.

As a fourth factor, the Examiner is performing an improper piecemeal construction that uses hindsight to arrive at the claim elements. In other words, the Examiner is picking and choosing unrelated and isolated sentences or teachings from Arnold and Biebesheimer with hindsight of Appellants' invention to allegedly obviate the pending claims. One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

As a fifth factor, no reasonable expectation of success has been established for modifying Arnold with the teachings of Biebesheimer to arrive at the recitations of the claims. Arnold and Biebesheimer teach very different inventions with very different architectures for implementing their respective inventions. These elements, functioning in different capacities and in different hardware and software structures, cannot simply be added together and expected to properly function.

As a sixth factor, Appellant argues that no teaching or suggestion exists to make the combination because the references are directed to solving completely different problems. The background in Arnold discusses problems associated with allocating storage. By contrast, the background in Biebesheimer discusses problems associated with search and retrieval systems.

These various factors show that elements in the claims are not obvious in view of the Arnold and Biebesheimer.

Claim Rejections: 35 USC § 103(a)

Claims 6-7 and 17-18 are rejected under 35 USC § 103(a) as unpatentable over US publication number 2004/0243692 (Arnold) in view of US publication number 2002/0107843 (Biebesheimer) and US publication number 2003/0028825 (Hines). These rejections are traversed.

As explained above, Arnold and Biebesheimer fail to teach or suggest all of the elements of the independent claims. Hines fails to cure these deficiencies. Thus for at least these reasons, claims 6-7 and 17-18 are allowable over Arnold in view of Biebesheimer and Hines.

Sub-Heading: Dependent Claim 6

Claim 1 recites determining a pattern for parameterizations. Dependent claim 6 then recites that these parameterizations relate to operating system patches. The Office Action cites Hines at paragraph [0049] for allegedly teaching dependent claim 6. Appellants respectfully disagree.

Paragraph [0049] in Hines mentions the words "operating system" and "patch" in the context of a service tool with selected language preferences. Hines, however, does not discuss determining a pattern based on operating system patches. Nowhere does Hines in view of Arnold and Biebesheimer teach that a pattern is determined for OS patches. Patterns for OS patches are never discussed or even suggested in these references.

For at least these reasons, dependent claim 6 is allowable over Arnold in view of Biebesheimer and Hines.

CONCLUSION

In view of the above, Appellants respectfully request the Board of Appeals to reverse the Examiner's rejection of all pending claims.

Any inquiry regarding this Amendment and Response should be directed to Philip S. Lyren at Telephone No. 832-236-5529. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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VIII. Claims Appendix

1. (original) A method of identifying at least one exceptional managed system amongst a set of comparable managed systems, each managed system having a number of system configuration attributes, the method comprising:

selecting a set of managed systems;

selecting a set of parameterizations relating to the managed systems;

determining a pattern for each of the parameterizations based on the system configuration attributes;

comparing substantially each of the managed systems to substantially each of the patterns; and

isolating a managed system based on the comparing;

wherein the patterns are determined by a supervised machine learning algorithm.

2. (original) The method of claim 1, wherein the managed systems are computer systems.

3. (original) The method of claim 2, wherein the system configuration attributes include at least one of the following:

operating system patches;

active processes;

installed application software programs;

memory configuration; and

peripheral devices.

4. (original) The method of claim 1, wherein selecting of the set of managed systems includes classification of the systems in accordance with a system attribute.

5. (original) The method according to claim 1, further comprising allocating a resource to any system that has been isolated.

6. (original) The method according to claim 1, wherein the set of parameterizations includes at least one parameterization relating to operating system patches.

7. (original) The method according to claim 5, wherein the set of parameterizations includes at least one parameterization relating to operating patches and the step of allocating a resource to the system includes an analysis of whether at least one operating patch should be installed or removed from a system.

8. (original) The method according to claim 1, further comprising assigning a priority value to an isolated system.

9. (original) The method according to claim 8, further comprising compiling a list of isolated systems and ordering the isolated systems in accordance with their priority values.

10. (original) The method according to claim 8, further comprising allocating a resource in accordance with priority values.

11. (original) The method according to claim 1, wherein the supervised machine learning algorithm is a rule learning algorithm.

12. (original) A method according to claim 1, further comprising annotating an isolated system with a measure indicative of the results of the comparing, wherein the measure is based on at least one of the following:

an extent of deviation from a pattern;

a degree of support for a pattern;

a confidence level of a pattern;

an assessment of the significance of a pattern; or

a cumulative number of patterns from which the system deviates.

13. (original) A method according to claim 12, further comprising compiling a list of isolated systems ordered in accordance with said measures.

14. (original) A system for identifying exceptional managed systems amongst comparable managed systems, each managed system having a number of system configuration attributes, the system comprising:

a selection component that selects a set of managed systems;

a supervised machine learning algorithm that determines patterns for a set of parameterizations representing constraints on the system configuration attributes for the selected set of managed systems;

a comparison component that compares the managed systems to the patterns; and

an isolating component that isolates the managed systems that deviate from the patterns as exceptional managed systems.

15. (original) The system of claim 14, wherein the selection component classifies the set of managed systems in accordance with a system attribute.

16. (original) The system according to claim 14, further comprising an allocation component that allocates a resource to the systems that have been isolated.

17. (original) The system according to claim 14, wherein the set of parameterizations includes at least one parameterization relating to operating system patches.

18. (original) The system according to claim 16, wherein the set of parameterizations includes at least one parameterization relating to operating patches and the allocation component conducts an analysis of whether at least one operating patch should be installed or removed from a system.

19. (original) The system according to claim 14, further comprising a prioritization component that assigns priority values to the isolated systems, compiles a list of isolated systems, and orders the isolated systems in accordance with their priority values.

20. (original) The system according to claim 14, wherein the supervised machine learning

algorithm is a rule learning algorithm.

21. (original) The system according to claim 14, further comprising an annotation component that annotates the isolated systems with a measure that indicates the extent to which each isolated system deviates from the patterns.

22. (original) A system for identifying exceptional managed systems amongst comparable managed systems, each managed system having a number of system configuration attributes, the system comprising:

means for selecting a set of managed systems;

means for determining patterns for a set of parameterizations representing constraints on the system configuration attributes for the selected set of managed systems, according to a supervised machine learning algorithm;

means for comparing the managed systems to the patterns; and means for isolating managed systems that deviate from the patterns as exceptional managed systems.

23. (original) Computer data storage media having programmed thereon computer software which performs the following functions:

selecting a set of managed systems, each managed system having a number of system configuration attributes;

selecting a set of parameterizations relating to the managed systems;

determining a pattern for each of the parameterizations based on the system configuration attributes;

comparing substantially each of the managed systems to substantially each of the patterns; and

isolating an exceptional managed system based on the comparing;

wherein the patterns are determined by a supervised machine learning algorithm.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.